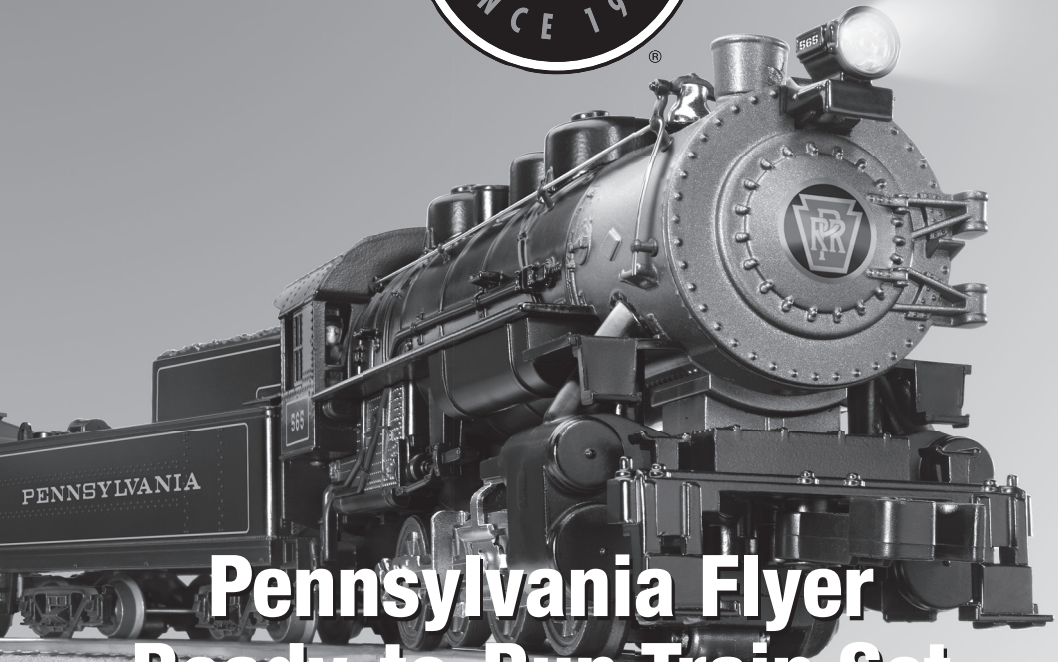


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Pennsylvania Flyer Ready-to-Run Train Set Owner's Manual

CAUTION—ELECTRIC TOY

NOT RECOMMENDED FOR CHILDREN UNDER EIGHT YEARS OF AGE. AS WITH ALL ELECTRIC PRODUCTS, PRECAUTIONS SHOULD BE OBSERVED DURING HANDLING AND USE TO PREVENT ELECTRIC SHOCK.

**TRANSFORMER RATINGS—INPUT: 120 VAC; 60 HZ ONLY.
AC OUTPUT: 18 V; 40 VA**

Congratulations!

Congratulations on your purchase of the Lionel Pennsylvania Flyer Ready-To-Run Train Set! This set features everything you need to get started—a PowerMax Transformer, a huge loop of easy-to-assemble FasTrack track, a string of detailed cars, and a powerful Lionel locomotive.

Have fun growing with this complete train set! Start with the set components, then follow your imagination into your own miniature world. Expand your railroad empire with additional FasTrack track sections, enhance your layout with accessories, lengthen your consist with extra cars, or operate a new locomotive at the head end of your train! Explore the possibilities at your authorized Lionel dealer.

Use this Owner's Manual to learn how to set up, operate, and maintain your train set for years of reliable operation.

Parents! **The transformer included with this set should be periodically examined for conditions that may result in the risk of fire, electric shock, or injury to persons (such as damage to the output cord, blades, housing, or other parts). In the event that such conditions exist, the transformer should not be used until properly repaired.**

Pennsylvania Flyer Train Set Inventory

- **0-8-0 Locomotive**
- **Tender**
- **Boxcar**
- **Three-dome tankcar**
- **Porthole caboose**
- **PowerMax transformer**
- **Three straight FasTrack track sections**
- **Eight curved FasTrack track sections**
- **One FasTrack terminal track section**
- **Telephone poles**
- **Billboard**
- **Smoke fluid**
- **Replacement traction tire**
- **Owner's Manual**

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Lionel®, LEGACY™, TrainMaster®, Odyssey®, RailSounds®, CrewTalk™, TowerCom™, DynaChuff™, StationSounds™, Pullmor®, ElectroCoupler™, Magne-Traction®, CAB-1® Remote Controller, American Flyer®, Lionel ZW®, ZW®, MagniVision®, TMCC®, Lionelville®, Wireless Tether™, Powerhouse™, LionMaster®, Conventional Classics™, Postwar Celebration Series™, TruRail™, PH-1 Powerhouse®, Powermaster®, Powerstation-Powerhouse®, Accessory Motor Controller™, AMC™, Accessory Switch Controller™, ASC™, Action Recorder Controller™, ARC™, Track Power Controller 300™, TPC 300™, Track Power Controller 400™, TPC 400™, Block Power Controller™, BPC™, Operating Track Controller™, OTC™, FatBoy™, Lionel Lines®, Joshua Lionel Cowen Series™, Lockon®, TrainSounds™, MultiHorn™, MultiWhistle™, Choo-Choo™

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Creating your layout

Operating your PowerMax Transformer safely

Your Lionel PowerMax Transformer is listed by Underwriter's Laboratory Inc. and has been carefully designed to ensure peak performance. When using electrical products, basic safety precautions should be maintained.

Be sure to observe the following guidelines:

- Read the manual thoroughly before using this device.
- This device is not recommended for children under eight years of age.
- Parents should periodically inspect this product for potential hazards and, if necessary, have them repaired by an authorized Lionel Service Center. In the event that such a condition exists, the transformer should not be used until it has been properly repaired.
- The PowerMax Transformer is intended to be used indoors. Do not use this device if water is present. Serious or fatal injuries may result.
- Use the PowerMax Transformer only for its intended purpose.
- The PowerMax Transformer was meant to operate on 120-volt, 60-Hertz power. Do not connect this product to any other power supply.
- Do not operate the PowerMax Transformer with a damaged cord, plug, or case.
- To avoid the risk of electrical shock, do not disassemble the unit. There are no user serviceable parts inside. If damaged, take this product to an authorized Lionel Service Center. Visit www.lionel.com for a list of authorized Service Centers.
- Do not operate the PowerMax Transformer on your layout unattended. Obstructed accessories or stalled trains may overheat, resulting in damage to your layout.
- Always unplug the PowerMax Transformer from the power source when not in use.
- Never insert objects into the ventilation slots on this product. Damage to sensitive electronic components can result.

Creating your layout

Building your Lionel layout

Your set comes with eight curved sections, three 10" straight sections, and one terminal section of track. Figure 1 provides some examples of layouts that you can build with these track sections.

You may choose to add more FasTrack track sections to create an endless number of exciting track arrangements for more fun, action, and variety.

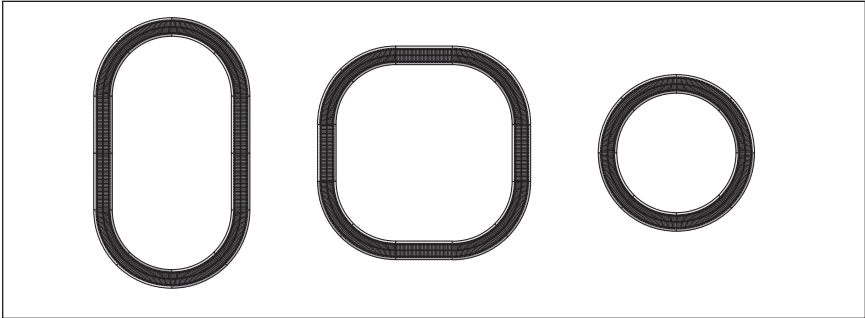


Figure 1. Track layout ideas

FasTrack Add-on Track Packs (available separately) make it easy to expand your railroad. Each Track Pack includes all the track sections you need to create a more advanced layout using the sections included with this set. Refer to Figure 2 to explore the possibilities.

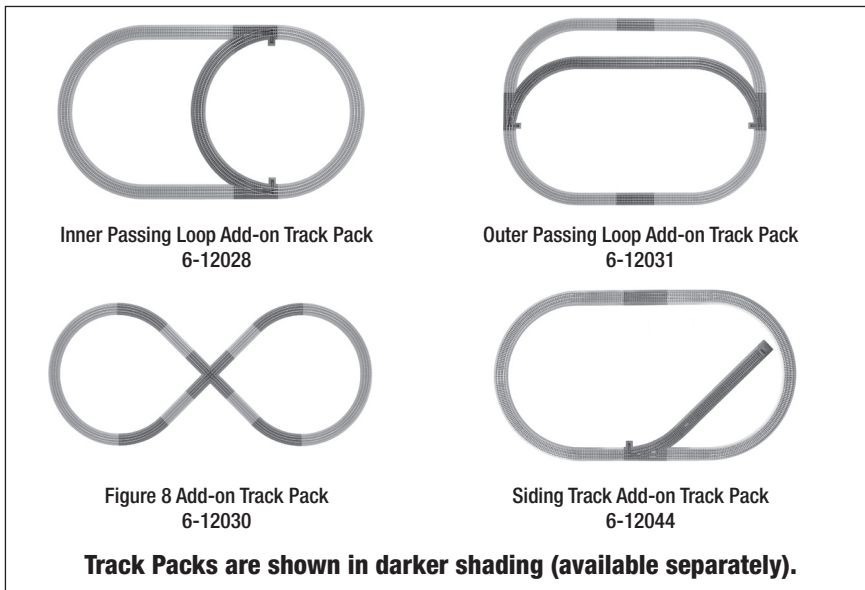


Figure 2. Add-on Track Pack layouts

Creating your layout

Joining the FasTrack track sections

FasTrack track sections join together easily. With interlocking roadbed sections and large rail tabs, the track fits together securely so you always have good electrical contact. Take a look at Figure 3 to see how to join the track sections.

1. **Line up your two sections of track.**
2. **Insert the rail tabs into the openings at the ends of the corresponding rails.**
3. **Press the sections together until the interlocking roadbed snaps into place.**

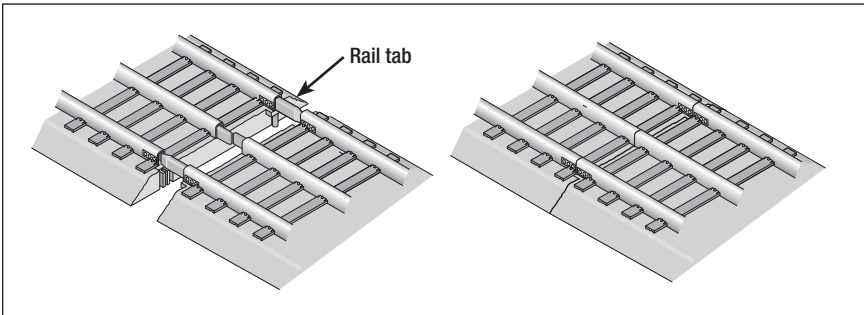


Figure 3. Joining the track sections

Connecting your PowerMax Transformer

Connect your FasTrack terminal section to the PowerMax Transformer. Use the wires that are already attached to the terminal section. Make sure that all connections are secure. Loose connections can produce extremely high temperatures. For this reason, do not touch the terminals or track connections during use. Also, do not locate scenery materials such as lichen or ground foam near the terminals.

1. **Feed the wires through the notch in the FasTrack terminal section.** Refer to Figure 4 on page 7.
2. **Loosen the red TRACK thumbscrew terminal, then slide the red spade-shaped connector into position.** The thumbscrew post should be positioned between the “blades” of the spade connector. Be sure that the blades are touching the metal post. Tighten the thumbscrew to secure the connection.
3. **Loosen the black TRACK thumbscrew terminal, then slide the black spade-shaped connector into position.** Tighten the thumbscrew to secure the connection. Be sure that the blades are touching the metal post. Tighten the thumbscrew to secure the connection.

Creating your layout

Connecting your PowerMax Transformer (continued)

4. Plug the PowerMax Transformer into your wall outlet (120 volts).

As your layout expands, you may also make power connections with the stripped ends of wires, placing no more than two wires on each terminal. For best performance on large layouts, it is recommended that you use 16-gauge wire to connect your PowerMax Transformer to the track. On larger layouts where several track connections are required, the use of separate junctions/terminal strips (available at your local electronics store) is recommended to prevent voltage drops.

Caution! To prevent the excessive build up of heat, be sure to select the proper wire gauge for your layout. Follow these guidelines:

- Track connections must be made with 18-gauge wire or heavier. Larger layouts require a minimum of 16-gauge wire.
- Use 24-gauge wire only when connecting single accessories that require lower current.
- When wiring multiple accessories (two or more) or accessories that require higher current, be sure to use 18- to 16-gauge wire.

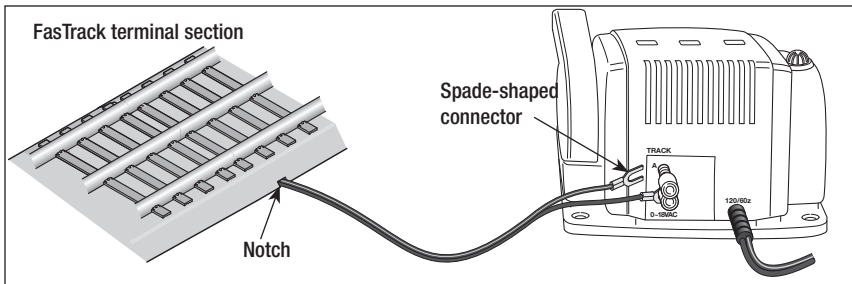


Figure 4. Controller connections

Running your train

Running your train set

1

With track power off, place your train set on the track.

Refer to page 10 for information on coupling the cars.

2

Connect the drawbar between the locomotive and tender.

See Figure 5.

Caution! If the smoke unit switch is in the ON position, add smoke fluid to your locomotive's stack to prevent damage to the smoke unit. Refer to page 9 for additional information.

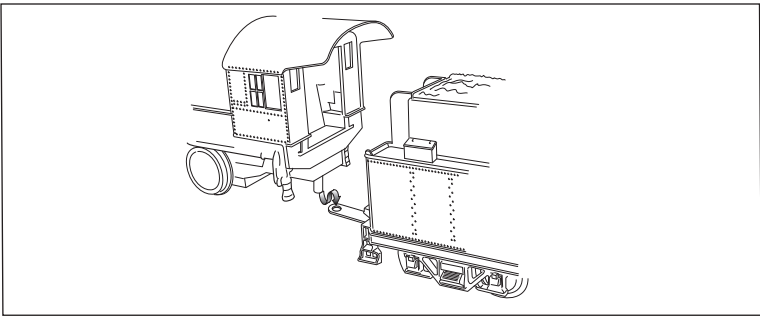


Figure 5. Drawbar connection

3

Power up your locomotive with your transformer.

Your locomotive is designed to operate on 7-15 volts alternating current.

Virtually all Lionel and Lionel-compatible alternating-current transformers are suitable.

Note! Do not power your locomotive with direct-current (DC) transformers. The locomotive was designed for use with alternating-current (AC) transformers only.

4

Move 'em out!

Get your locomotive moving. Your locomotive goes through a repeating pattern of operations: forward, neutral, reverse, neutral, and so on. To sequence the reverse unit, press the DIRECTION button on your transformer, or briefly bring the throttle all the way back to the OFF position and then forward, for one to four seconds. When track power is interrupted, the locomotive advances to the next operational state.

Adjust track voltage until your locomotive moves at your desired speed.

Running your train

Operating your train with the PowerMax Transformer

You're clear for departure! Move the throttle control handle forward to increase power to the track. The farther forward you push the handle, the faster your train will go.

Note! Quickly shutting off or throwing the throttle all the way forward will not result in an instant change in track voltage.

Remember that the greater the load on the engine (adding more cars for the engine to pull, for example), the farther forward the handle must be pushed before it will operate the locomotive.

Adding smoke fluid to your locomotive's smoke generator

Your locomotive is equipped with a smoke generator that produces safe, clean white smoke during operation if the smoke unit switch is in the ON position. Refer to Figure 8 on page 13 for the location of the switch.

The smoke generator requires the periodic addition of Lionel smoke fluid in order to function. A small bottle of smoke fluid is included with this set. Press down and unscrew the cap. Pierce the tip on the nozzle. Add about four drops of fluid directly into the locomotive's stack. Smoke production commences momentarily. It will start faster if you run your locomotive at higher speeds. When smoke production decreases, add more fluid (about four drops). An idle locomotive will not smoke.

Smoke production is greater at higher voltages and when the locomotive is pulling a heavy load or a long consist.

Note! If you prefer to operate the locomotive without smoke or you do not want to add smoke fluid, slide the smoke unit switch to the OFF position.

Caution! When the smoke unit switch is in the ON position, always keep a small amount of smoke fluid in the locomotive's smoke generator; the generator's element can become damaged if operated without smoke fluid. This is particularly true if your locomotive sits in neutral for an extended period of time without smoke fluid in the generator.

Running your train

Coupling

When coupling your cars, at least one of the mating couplers must be open as shown at the left in Figure 6. Press down on the lock release to open the coupler, then push the cars toward each other until they lock together.

Note! Keep in mind that it's easier to couple cars on a straight stretch of track.

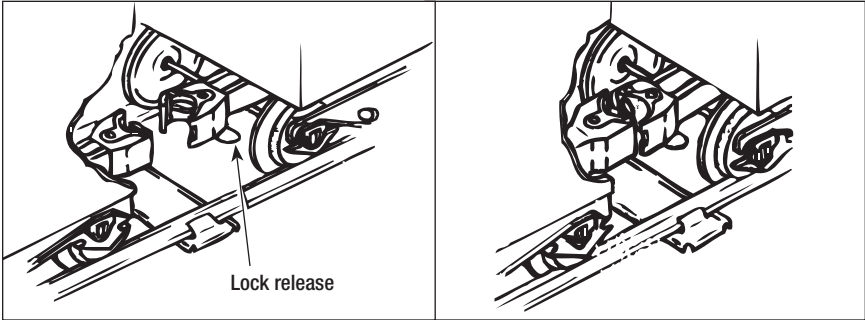


Figure 6. Coupler operation

Running your train

Experiencing the features of the PowerMax Transformer

Refer to Figure 7 on page 12 for the location of the Transformer features listed in this section.

THROTTLE

Push the throttle forward to increase track power. The markings on the throttle approximate the percentage of full power. For more realism, push the throttle slowly to gradually increase or decrease the speed of the locomotive. Slowing or stopping the locomotive with the throttle instead of the DIRECTION button will allow you to continue in the same direction when you increase the throttle again. To achieve this effect, reduce the throttle to the point that the locomotive stops moving, but don't completely turn off the throttle. That way, your train won't sequence into neutral.

DIRECTION

The DIRECTION control button interrupts track power to activate the reverse unit in your locomotive. Your locomotive will not respond to this button when the reverse unit switch is in the OFF position.

WHISTLE/HORN

The WHISTLE/HORN button will activate your locomotive's whistle or horn. The sound will continue until the button is released. No external sound activation buttons are needed.

Note! Your locomotive is equipped with an operating air whistle.

BELL

The BELL button will activate the bell sounds on locomotives equipped with this feature. Press and hold the BELL button for two to three seconds to begin the sounds; press and hold the button again to turn off the ringing.

Note! This 0-8-0 locomotive is not equipped with bell sounds.

Note! Do not activate horns, whistles, or bells on RailSounds-equipped locomotives until track power has been turned on for a few moments, or a continuous horn/whistle or bell sound may occur. To correct this problem, simply turn off the transformer, then turn it back on.

POWER-ON INDICATOR

The green light will remain on during normal operation. The green light will begin to flash if you exceed the power limit of the Transformer. The unit will allow you to momentarily exceed the power limit, but power will be gradually reduced until the problem is corrected. The benefit is that the Transformer will not instantly turn off.

Running your train

Experiencing the features of the PowerMax Transformer (continued)

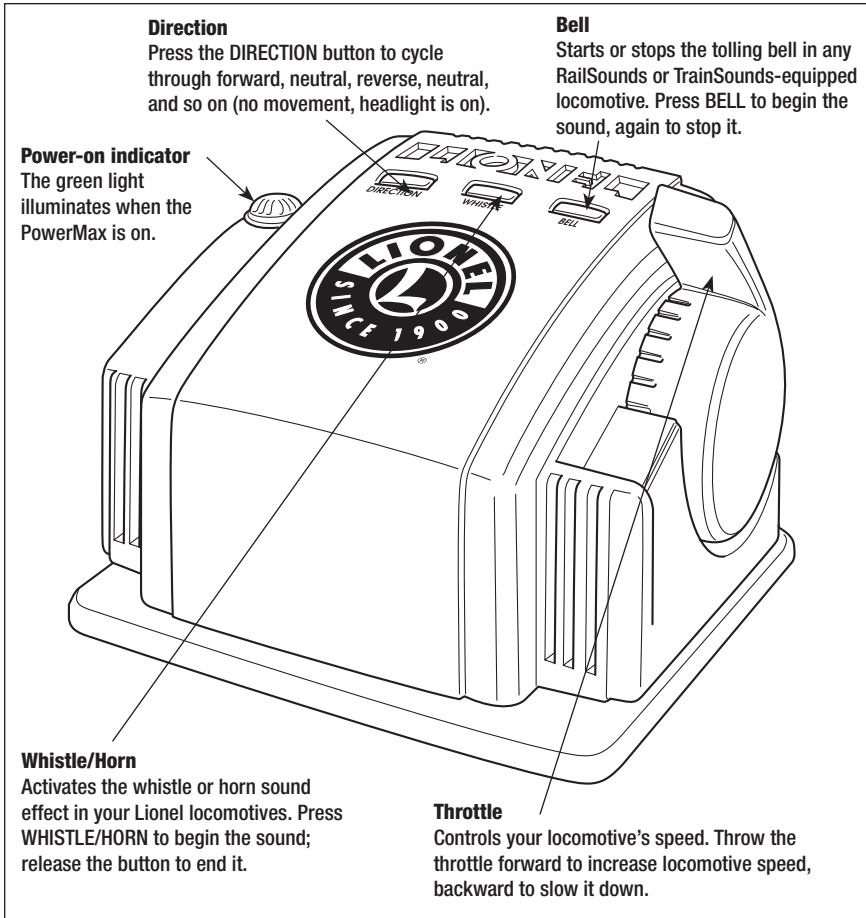


Figure 7. Transformer features

Running your train

Reverse unit procedure

The electronic reverse unit inside your Lionel locomotive acts like the transmission in a car. When you apply power to the track, the locomotive moves in the direction specified by the reverse unit—or it sits in neutral, awaiting another power interruption. Power interruptions are the signal that tells the reverse unit to sequence to the next operational state.

To interrupt power and sequence the locomotive's reverse unit through the forward-neutral-reverse-neutral-forward sequence, press the direction control button, or briefly bring the throttle lever all the way back to the Off position, for one to four seconds. Refer to Figure 7 on page 12 for the location of these controls.

Also, the locomotive can be “locked” into a certain mode of operation by throwing the reverse unit switch located on the underside of the frame (see Figure 8). When the switch is thrown to the OFF position (towards the rear of the locomotive), the locomotive will be locked in the next mode of operation in the sequence. The DIRECTION button will then have no effect on the direction of the locomotive. If you would like to resume forward-neutral-reverse operation, simply throw the reverse unit switch back to the ON position.

Additionally, this reverse unit has a “power-up reset” feature. If the locomotive sits without power for a short period of time, the reverse unit will automatically reset and start in the forward direction when the transformer is turned on or “powered up,” if the reverse unit switch position is in the ON position.

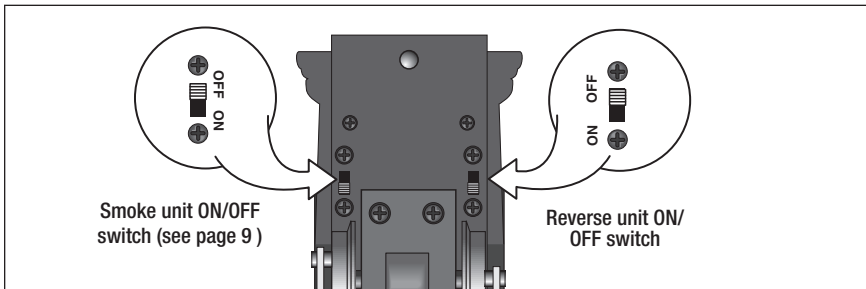


Figure 8. Switch location

PowerMax Transformer operation

Powering your layout with the PowerMax Transformer

Your PowerMax Plus Transformer provides a total output of 2.4 amps. Also, available voltage depends on how much load is on the output. Generally, track voltage is 0-16 volts (AC).

You may momentarily approach or exceed the 2.4 amp limit of the PowerMax Plus Transformer when pulling illuminated cars, or fighting over grades with heavy loads. When you reach 2.4 amps, the green light on the Transformer will begin to flash. This indicates that the Transformer is in “fold-back mode.” In fold-back mode, the Transformer is automatically reducing, or folding back, power. This gradual reduction in power provides interruption-free power while bringing the amperage back down to a safe level. If this condition lasts for more than 30 seconds, the Transformer will shut off the power to the track and the green light will continue to flash. Move the throttle to the off position to reset the Transformer and return to normal operation.

Maintaining and servicing your set

Lubricating your locomotive

Help your steam locomotive lead a long and productive life on your railroad by maintaining it properly.

We recommend that you purchase a Lionel Lubrication and Maintenance Kit (6-62927), available from your Lionel dealer. Two basic rules to keep in mind: never over-lubricate (a small amount will do) and avoid getting grease or oil on the locomotive's wheels, contact rollers, or your track.

You'll know your locomotive requires lubrication when visual inspection reveals dryness on the parts indicated in Figure 9. Remove accumulated dirt and dust before lubricating, and always lubricate any locomotive emerging from prolonged storage.

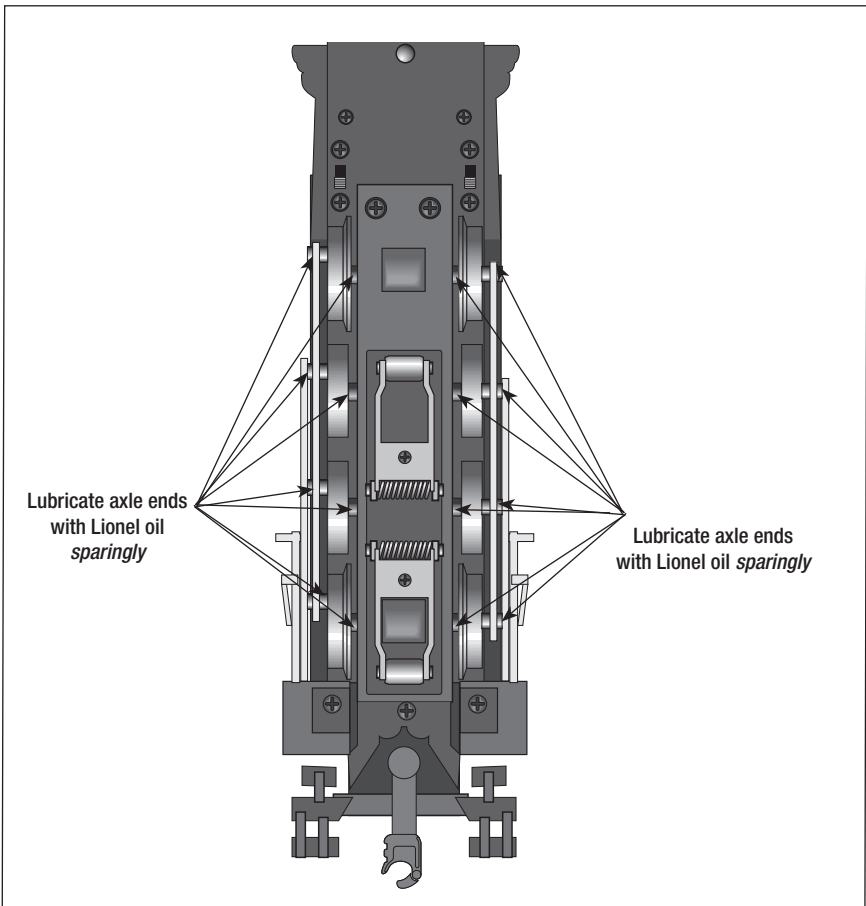


Figure 9. Lubrication points

Maintaining and servicing your set

Replacing your locomotive's traction tire

One of the locomotive's drive wheels is fitted with a rubber traction tire to enhance tractive effort, allowing your locomotive to pull many cars at once.

To replace the traction tire, simply unscrew the drive rod screw from the wheel using a 3/16" nut driver. Refer to Figure 10. Remove the old traction tire from under the drive rod and slip on the replacement, Lionel part no. 6308661206. Replace the spacer, retighten the drive rod screw, and you're ready to pull that long freight back to the yard.

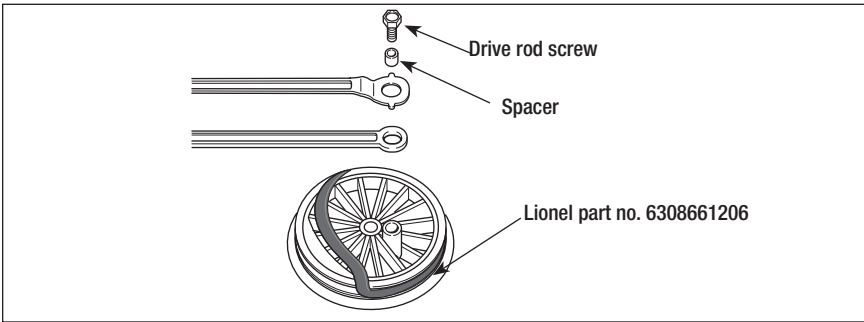


Figure 10. Traction tire replacement

Replacing your locomotive's headlamp

Your locomotive is equipped with an LED style headlight for longer life. Please contact your nearest Lionel Service Center or Lionel Service if this needs replacing.

Maintaining and servicing your set

Replacing your caboose's lamp

During the course of normal operation, the lamp inside your caboose may require replacement. Follow these steps and refer to Figure 11.

1. Remove the four screws from the underside of the car.
2. Lift the body off the frame.
3. Pull the lamp out of the socket and replace it with part no. 6000161300, available from your authorized Lionel Service Center or Lionel Service.
4. Place the body back onto the frame and replace the four screws.

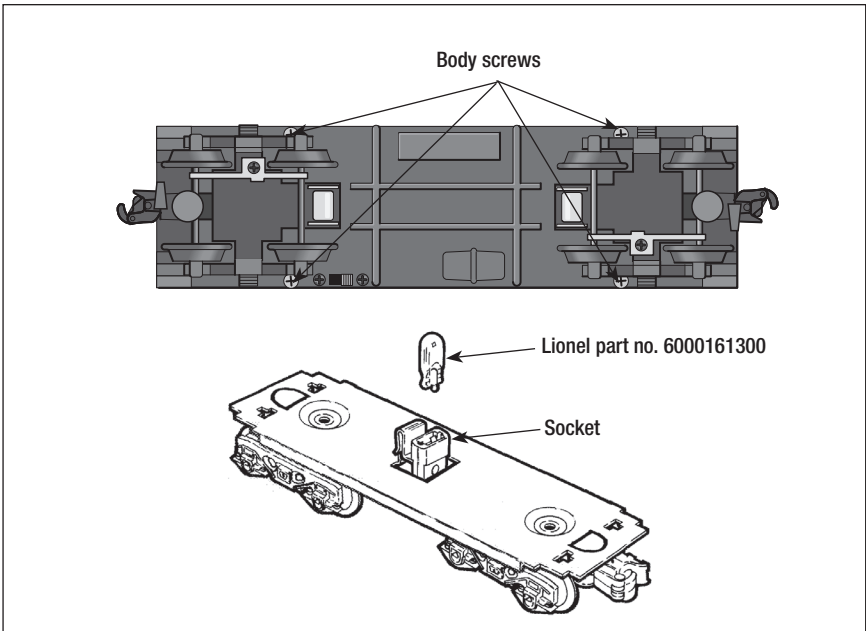


Figure 11. Caboose lamp replacement

Maintaining and servicing your set

Troubleshooting

No lights or operation

Be sure that the PowerMax Transformer is plugged in and the wires are connected.

Train runs, but WHISTLE, BELL, and DIRECTION buttons do not work

Check track connections. The track must be connected to the “A” and “U” terminals on the Transformer.

No change when DIRECTION button is pressed

Be sure that your locomotive’s reverse unit switch is ON. Press the direction button for a duration of one to four seconds.

Locomotive runs slowly or lights dim at the far end of the track

On larger layouts, additional track resistance may cause reduced track voltage as the trains move away from the power terminal section. Install additional FasTrack terminal sections around your layout and connect them to your Transformer to distribute power. Note that locomotives may decrease speed slightly around curves.

Green light begins to flash

Be sure that all the wheels are properly on the track. Ensure that no metal objects are in contact with the track to cause a short. Also, be sure that the power limit of the Transformer has not been exceeded; the unit will gradually reduce power until the problem is corrected. Note that the light will also flash when you hold down all three buttons to set the accessory voltage.

Bell button blows whistle

Switch the wire connections at the Transformer terminals. The U terminal should be connected to the outside (common) rail.

Locomotive smoke is light or absent

Be sure that the Smoke Unit switch is in the ON position. Add four to six drops of smoke fluid if you have not done so already.

We invite you to visit www.lionel.com and click on the Customer Services tab to order parts and access other important service information.

Maintaining and servicing your set

FCC Statement

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

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Notes: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Lionel Limited Warranty Policy & Service

This Lionel product, including all mechanical and electrical components, moving parts, motors and structural components, with the exception of **LIGHT BULBS, LED's & TRACTION TIRES** are warranted to the original owner-purchaser for a period of **one year from the original date of purchase** against original defects in materials or workmanship when purchased through a **Lionel Authorized Retailer***.

This warranty does **NOT** cover the following:

- Normal wear and tear
- Light bulbs or LED's
- Defects appearing in the course of commercial use
- Damage resulting from abuse/misuse of the product

Transfer of this product by the original owner-purchaser to another person voids this warranty in its entirety. Modification of this product in any way; visually mechanically or electronically, voids the warranty in its entirety.

Any warranted product which is defective in original materials or workmanship and is delivered by the original owner-purchaser (this warranty is non-transferrable) to Lionel LLC or any Lionel Authorized Service Station **MUST** be accompanied by the original receipt for purchase (or copy) from an **Authorized Lionel Retailer***, will at the discretion of Lionel LLC, be repaired or replaced, without charge for parts or labor. In the event the defective product cannot be repaired, and a suitable replacement is not available, Lionel will offer to replace the product with a comparable model (**determined by Lionel LLC**), if available. In the event a comparable model is not available the customer will be refunded the original purchase price (requires proof of purchase from the **Authorized Lionel Retailer*** it was originally purchased). Any products on which warranty service is sought must be sent freight or postage prepaid (Lionel will refuse any package when postage is due). **Transportation and shipping charges are not covered as part of this warranty.**

NOTE: Products that require service that do not have a receipt from an LIONEL AUTHORIZED RETAILER* will be required to pay for all parts required to repair the product (labor will not incur a charge) providing the product is not older than 3 years from date of manufacture and is within 1 year from date of purchase. A copy of the original sales receipt is required.

In no event shall Lionel LLC be held liable for incidental or consequential damages.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Instructions for Obtaining Service

If service for this Lionel LLC product is required; bring the item, along with your DATED sales receipt and completed warranty information (at the bottom of this page) to the nearest Lionel Authorized Service Station. Your nearest Lionel Service Station can be found by calling 1-800-4-LIONEL or by accessing the website at www.lionel.com.

If you prefer to send your Lionel product directly to Lionel, for repair you must FIRST call 586-949-4100 extension 9105 or FAX Lionel at 586-949-5429 or write to Customer Service, 26750 Twenty Three Mile Road, Chesterfield, MI 48051-2493. Please have the 6-digit Lionel product number, the date of original purchase, the dealer where the item was purchased and what seems to be the problem. You will receive a return authorization (RA) number to ensure your merchandise will be properly tracked and handled upon receipt at Lionel LLC.

Once you have your Return Authorization (RA) number, make sure the item is packed in its original Styrofoam inner container which is placed inside the original outer display box (this will help prevent damage during shipping and handling). This shipment **MUST** be prepaid and we recommend that it be insured with the carrier of your choice.

Please make sure you have followed all of the above instructions carefully before returning any merchandise for service. You may choose to have your product repaired by one of Lionel LLC's Authorized Service Stations after its warranty has expired. A reasonable service fee should be expected once the product warranty has expired.

Warranty Information

Please complete the information below and keep it, along with your **DATED ORIGINAL SALES RECEIPT**. You **MUST** present this form **AND** your **DATED SALES RECEIPT** when requesting warranty service.

*A complete listing of Lionel Authorized retailers can be found by calling 1-800-4-LIONEL or by visiting our website at www.lionel.com.

Products that are more than 3 years old, from date of manufacture, are not applicable for warranty coverage, even if they have never been sold prior to this date. (Under no circumstance shall any components or labor be provided free of charge.)

Name _____

Address _____

Place of Purchase _____

Date of Purchase _____

Product Number _____

Product Description _____



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